Notice of Allowability	Application No. 10/535,624	Applicant(s) LEE ET AL.	
	Examiner SATYANARAYANA R. GUDIBANDE	Art Unit 1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *8/22/08*.

2. ☒ The allowed claim(s) is/are *1,2,4,5 and 7-15*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *8/28/08* .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Andrew D Kosar/
Primary Examiner, Art Unit 1654

DETAILED ACTION

EXAMINER'S COMMENT

The support for the applicant's claim amendment to include "leucine" in the Markush group representing the variable 'X' comes from the originally submitted claims 3 and 5 filed 5/20/05, and not from the specification page 11, lines 15-25 as stated in applicant's remarks page 9, paragraph 3 filed 5/5/08.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ms. Judith Kim on 8/28/08.

The application has been amended as follows:

Please cancel Claim 6.

Please replace Claim 1 with the following:

1. (Currently amended) A peptide separated from tunicate and comprising amino acid sequence represented by chemical formula I:

$W_1X_2B'_3U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18}$ (SEQ ID NO: 11) (I)

wherein,

W represents tryptophan;
X, each variable of which X_2, X_5, X_6, X_{10}, X_{16} and X_{17} is individually selected from an amino acid residue selected from the group consisting of tyrosine, valine, isoleucine, leucine, methionine, phenylalanine and tryptophan;
B represents an amino acid residue selected from the group consisting of arginine, lysine and histidine;
B' represents an amino acid residue selected from the group consisting of arginine, lysine and histidine or from a group consisting of asparagine and glutamine;
C is Cysteine;
U represents an amino acid residue selected from the group consisting of glycine, serine, alanine and threonine.

Please replace Claim 4 with the following:

4. (currently amended) The peptide as set forth in claim 1, wherein the peptide comprises amino acid sequence SEQ. ID No: 1.

Please replace Claim 5 with the following:

5. (currently amended) A peptide comprising an amino acid sequence represented by chemical formula II:

$U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18}$ (SEQ ID NO: 13) (II)

wherein,

U represents an amino acid residue selected from a group consisting of glycine, serine, alanine and threonine;

X, each variable of which X_5, X_6, X_{10}, X_{16} and X_{17} is individually selected from an amino acid residue selected from the group consisting of tyrosine, valine, isoleucine, leucine, methionine, phenylalanine and tryptophan;

B represents an amino acid residue selected from the group consisting of arginine, lysine and histidine; and

B' represents an amino acid residue selected from the group consisting of arginine, lysine and histidine or from a group consisting of asparagine and glutamine.

Please replace Claim 7 with the following:

7. (Currently amended) The peptide as set forth in claim 5, wherein the peptide comprises an amino acid sequence represented by SEQ ID NO: 15 in which U_4 is alanine, X_5 is leucine, X_6 is leucine, B_7 is histidine, B_8 is histidine, U_9 is glycine, X_{10} is leucine, B'_{11} is asparagines, C_{12} is cysteine, U_{13} is alanine, B_{14} is lysine, U_{15} is glycine, X_{16} is valine, X_{17} is leucine and U_{18} is alanine.

Please replace Claim 8 with the following:

8. (Currently amended) A peptide dimer comprising an amino acid sequence represented by chemical formula III: wherein each peptide of the dimer is represented by chemical formula I (SEQ ID NO: 11) and the peptides are joined at the cysteine site by disulfide bond;

$W_1X_2B'_3U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18}$ (III)

$W_1X_2B'_3U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18}$.

Please replace Claim 9 with the following:

9. (Currently amended) A peptide dimer comprising an amino acid sequence represented by formula IV: wherein each peptide of the dimer is represented by chemical formula II (SEQ ID NO: 13), and the peptides are joined at the cysteine site by disulfide bond;

$U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18}$ (IV)

$U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18}$.

Please replace Claim 10 with the following:

10. (Currently amended) A peptide dimer comprising an amino acid sequence represented by formula V: wherein one peptide of the dimer is represented by chemical formula I (SEQ ID NO: 11) and another peptide of the dimer is represented by chemical formula II (SEQ ID NO: 13), and the peptides are joined at the cysteine site by disulfide bond;

$$W_1X_2B'_3U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18} \qquad (V)$$

$$\qquad\qquad\qquad\qquad\qquad\qquad |$$

$$U_4X_5X_6B_7B_8U_9X_{10}B'_{11}C_{12}U_{13}B_{14}U_{15}X_{16}X_{17}U_{18}.$$

Please replace claim 11 with the following:

11. (Currently amended) An antimicrobial agent comprising a peptide comprising the chemical formula I of claim 1 as an active ingredient.

Please replace claim 12 with the following:

12. (Currently amended) An antimicrobial agent comprising a peptide comprising the chemical formula II of claim 5 as an active ingredient.

Please replace claim 13 with the following:

13. (Currently amended) An antimicrobial agent comprising a peptide dimer comprising the chemical formula III of claim 8 as an active ingredient.

Please replace claim 14 with the following:

14. (Currently amended) An antimicrobial agent comprising a peptide dimer comprising the chemical formula IV of claim 9 as an active ingredient.

Please replace claim 15 with the following:

15. (Currently amended) An antimicrobial agent comprising a peptide dimer comprising the chemical formula V of claim 10 as an active ingredient.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satyanarayana R. Gudibande whose telephone number is 571-272-8146. The examiner can normally be reached on M-F 8-4.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Satyanarayana R Gudibande/
Examiner, Art Unit 1654

/Andrew D Kosar/
Primary Examiner, Art Unit 1654